Prognosis of Canine Cutaneous Mast Cell Tumors

The Prognostic Challenge
The variable nature of histologic grading for canine cutaneous mast cell tumors (MCTs) has made it difficult for veterinary practitioners to offer their clients an accurate prognosis. The MSU VDL offers an exclusive panel of tests that dramatically increases prognostic certainty for these forms of cancer.

What Is Included in The Prognostic Panel?
The panel includes grading of MCTs according to a two-tier grading system developed by our laboratory, cell proliferation analysis (Ki-67, AgNORs), c-Kit PCR to detect internal tandem duplication (ITD) mutations in exon 11 and exon 8, and KIT immunohistochemistry to analyze expression of this tyrosine kinase receptor.

What Is The Scientific Basis Of This Prognostic Panel?
Ki-67 determines the number of proliferating cells. The number of AgNORs correlates with the speed of cell proliferation. Research indicates that neoplastic cell proliferation activity cannot reliably be predicted using a single measure, but prognoses developed from this combination of tests are highly correlated with survival and metastasis. ITD mutations in exon 11 of c-Kit have been detected in about 20 to 30 percent of canine cutaneous MCTs. MCTs with such mutations are highly aggressive, but respond well to tyrosine kinase-inhibiting (TKI) therapies. ITD mutations in exon 8 of c-Kit are less common and have been detected in two to five percent of canine cutaneous MCTs. These tumors are also expected to respond to TKIs. In addition, aberrant KIT expression patterns characterized by increased intracytoplasmic labeling and loss of membrane-associated labeling have been linked with decreased survival. MCT grading, cell proliferation analysis, c-Kit PCR, and KIT IHC results are all linked to MCT-associated survival and metastasis. While each test can be run independently, prognoses developed from interpretation of all tests offer the highest level of certainty.

What Sample Should Be Submitted?
All tests can be performed on routine formalin-fixed biopsy material as well as previously submitted biopsy samples. Alternatively, clients can request to have another pathology service submit the paraffin block to our laboratory if the tissue was originally processed elsewhere.

For more information, please contact the Anatomic Pathology lab at 517.353.1683, or visit our website at animalhealth.msu.edu for pricing and newsletter articles. A flowchart to support therapeutic decision-making is also available. Please visit animalhealth.msu.edu > Diagnostic Sections > Immunohistochemistry.

MICHIGAN STATE UNIVERSITY
VETERINARY DIAGNOSTIC LABORATORY
4125 Beaumont Road, Lansing, MI 48910
PH: 517.353.1683 | FX: 517.353.5096 | animalhealth.msu.edu

The MSU VDL is a full-service veterinary diagnostic laboratory, fully accredited by the AAVLD for all species.

Sample Submission Forms
Visit our website at animalhealth.msu.edu to access our most current submittal forms. Customized forms preprinted with your clinic information are also available at no cost via the Product Order Form.

Unbeatable Shipping
The MSU VDL offers a variety of shipping options. Our mailers comply with U.S. Postal Service, UPS, and FedEx regulations. All UPS mailers include prepaid overnight weekday delivery. All U.S. Postal Service mailers include prepaid delivery; delivery time will vary depending on your location.

Order Mailing Supplies
Standard, insulated, and biopsy mailers are available. Contact us at 517.353.1683 or complete the Product Order Form available online at animalhealth.msu.edu. You can also place an order by completing the SUPPLIES section on a submittal form.

Packaging and Mailing Samples
For shipping recommendations for individual tests, please refer to the information provided at animalhealth.msu.edu under “Available Tests.”

Speak Directly to Experts
Our veterinary professionals are available for consultation and can help you interpret your test results to better manage the health of animals entrusted to you.

Get Results by Email and Online
Had it with the fax machine? Contact us at 517.353.1683 to have results delivered by email.

All MSU VDL clients also have free, quick access to view results online through WebView. Reports are posted to the web hourly. Visit animalhealth.msu.edu and click “Log In” to request access to your diagnostic results.

Expect Quality in Testing and Service
The MSU VDL is a leader in establishing technical guidelines for public veterinary diagnostic laboratories in the United States and maintains a quality assurance team dedicated to promoting accuracy and reliability.

Customer Service Hours
Monday through Friday, 7:30 a.m. to 5:30 p.m. EST
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